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April 24, 2013

Mr. Peter DeMeo
Mail Code 501-02A
Department of Environmental Protection
Division of Land Use Regulation
P.O. Box 420 Trenton, New Jersey 08625-0420

Re: DEP LUR 30232-05-0001.2/ 13000 Eq

Dear Mr. DeMeo


We have reviewed the sand specification from Table 7-2 of the River Mile 10.9 Removal Action Draft Final Design Report, Lower Passaic River Study Area by CH2M-Hill, and have determined based on reference to Table 1, "Base Values of Mannings n" in the "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains," United States Geological Survey Water-supply Paper 2339, that the cover sand design gradation specification has an average median grain size of 0.8 mm and will exhibit a base Manning "n" approximate value of 0.025.

The USDA (Schwab et al., 1966, USDA-SCS, 1972b, and PA-DER 1990) reports the range of Manning coefficients for exposed, alluvial sediments that currently exists at the River Mile 10.9 Removal Action intertidal area ("site") is 0.02 to 0.025. The proposed River Mile 10.9 Removal Action engineered, isolation cap provides a top layer of m-c Sand that falls within that range. Therefore we do not expect any change in the river hydrodynamics (i.e. change in stream velocity or flooding potential) from this action.

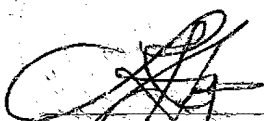
Our understanding is that the Manning coefficient selected by Moffatt & Nichol to characterize the existing sediment at the Removal Area is 0.023 in their hydrodynamic model that was utilized in the design of the cap materials. This roughness coefficient is in the mid-range of expected "n" values and is consistent with published reference documents.

Please feel free to contact me if you have any questions.

Sincerely,
FREY ENGINEERING, LLC



Leo Frey, PE
Consultant Engineer



Leo J. Frey III, PE
N. J. GE 34723